



BBC-003-1144003

Seat No. _____

M. Sc. (Sem. IV) (CBCS) Examination

July - 2021

Botany : Paper - 421

(Plant Biotechnology and Genetic Engineering)

Faculty Code : 003

Subject Code : 1144003

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

Instruction : All questions are to be attended as per information

- 1 Answer the following : 14
- (a) Write key feature of Ri plasmid
 - (b) Explain the importance of GMO
 - (c) Discuss role of REN in plant biotechnology
 - (d) Explain the principle of PCR technique
 - (e) What is the confirmation test for the DNA purity?
 - (f) List protein purification techniques
 - (g) Write the principle of Affinity chromatography.
- 2 Answer the following : 14
- (a) What is Biological Control?
 - (b) What are plantibodies ? write its application
 - (c) Define the 2D-electrophoresis
 - (d) What is transgene?
 - (e) Explain EST
 - (f) How will you remove RNA contamination from the isolated DNA?
 - (g) Why is ammonium sulphate a popular choice for salting out than other technique?
- 3 Answer the following : 14
- (a) What is vector? List vectors used in plant genetic engineering and explain in detail any one.
 - (b) Write applications of gene cloning in agriculture.

- 4** Answer the following : **14**
(a) Write short note on RFLP
(b) Write short note on Microarray.
- 5** Answer the following : **14**
(a) Explain Ion exchange chromatography for protein separation.
(b) Explain Isoelectric Focusing.
- 6** Answer the following : **14**
(a) Write notes on Radioimmunoassay (RIA)
(b) Write notes on Biological control of pest
- 7** Answer the following : **14**
(a) Write major steps of gene cloning in plants
(b) What is GMO? What are the screening techniques used for GMO?
- 8** Answer the following : **14**
(a) Discuss the importance of DNA based marker techniques in agriculture.
(b) Write short note on AFLP.
- 9** Answer the following : **14**
(a) Write the basic principle of Electrophoresis and explain different types in brief.
(b) Explain Gel Filtration Chromatography
- 10** Answer the following : **14**
(a) Write notes on Plantibody
(b) Write importance of ELISA techniques in detection of plant metabolites.